

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A ~~deformable mirror holder~~ structure comprising:
a self-deforming mirror mounted on a passive flexible support structure the
support structure comprising, a body with a receiving portion for receiving a
deformable mirror having a plurality of mirror electrodes formed on a surface,
wherein the receiving portion is defined by a one or more passive flexible support
structure elements arranged to provide a supporting surface on which the self-
deforming mirror, wherein the support structure is arranged to enable a deformation
response in the self-deforming mirror mounted thereon. ~~such that, in use, the support~~
~~structure provides a supporting surface to the mirror,~~

~~— wherein the support structure includes a plurality of discrete flexible~~
~~support elements that are disposed in an equi-spaced relationship in a circular~~
~~arrangement, and wherein each support structure is arranged to be in contact with~~
~~one or more of the mirror electrodes.~~

2. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as
claimed in claim 1, wherein the plurality of discrete flexible support elements are
spatially arranged to support the self-deforming mirror substrate from below, with
each of the support elements having an end shaped ~~[[to]]~~ for provide providing
support to the self-deforming mirror substrate and a flexible portion that connects the

supporting element's end of the support element to a to the holder's body portion of the support structure.

3. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 2, wherein at least one of the support elements is generally L-shaped such that one leg of the L-shape provides the flexible portion and the other leg of the L-shape provides the supporting surface end of the support element~~element's end~~.

4. (Cancelled)

5. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 2, wherein, ~~in use~~, each of the support elements is positioned so as to be in supportive contact with a different ~~mirror electrode~~ of the self-deforming mirror when mounted thereon.

6. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 2, wherein the support elements are formed of compliant epoxy/rubber material.

7. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 2, wherein the supporting end-shaped supporting portion of each support element is formed of compliant epoxy/rubber material and the remainder portion of each support element is formed of metal material.

8. (Previously Presented) A deformable mirror holder comprising a body with a receiving portion for receiving a deformable mirror wherein the receiving portion is defined by a passive flexible support structure such that, in use, the support structure provides a supporting surface to the mirror,

wherein the support structure comprises a plurality of discrete flexible support elements spatially arranged to support the mirror substrate from below, with each of the support elements having an end shaped to provide support to the mirror substrate and a flexible portion that connects the element's end to the holder's body, and

wherein the support elements are formed of a conducting compliant foam such that they permit electrical connection to a number of mirror electrodes.

9. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 2, wherein the support elements are formed as integrally formed as part parts of the holder body portion of the support structure.

10. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 6, wherein the compliance of compliant material selected to form at least a portion of each of the support elements ~~is adjusted~~ varies according to [[the]] an established position of the support element in the support structure.

11. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 10, wherein the compliance of the selected compliant material

varies according to the distance of the respective support element from the edge of a supported mirror substrate.

12. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 6,, wherein the compliance of each of the support elements is adjusted according to the position of the support element in the support structure.

13. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 12, wherein the compliance of each of the support elements is ~~adjusted by~~ varies according to varying the length of the support element.

14. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 12, wherein the compliance of each of the support elements is ~~adjusted by varying~~ varies according to the cross-sectional area of the support element.

15. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 12, wherein the compliance of each of the support elements is ~~adjusted by~~ varies according to varying the compliance of the compliant material used to form the support element.

16. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 1, wherein the support structure comprises a generally solid unitary structure with compliant characteristics, which unitary structure is arranged to extend

across the entire width of the self-deforming mirror substrate surface for support thereof from below.

17. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 16, wherein the unitary structure is formed of epoxy/rubber material.

18. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 16, wherein the unitary structure includes a number of hole sections for permitting access to a number of ~~mirror electrodes~~ of the self-deforming mirror when mounted thereon~~when in use~~.

19. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 16, wherein the unitary structure includes a number of metallic interconnections permitting connection to a number of electrodes of the self-deforming mirror electrodes ~~when in use~~mounted thereon, which metallic interconnections are arranged to respond to the deformation of the unitary structure in use.

20. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 16, wherein the compliance of the unitary structure varies according to the distance from the edge of the unitary structure.

21. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 20, wherein the unitary structure comprises a plurality of discrete annuli each composed of a compliant material having a different compliance.

22. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim 20, wherein the thickness of the unitary structure varies according to distance from the edge of the unitary structure.

23. (Currently Amended) The ~~deformable mirror holder~~ mirror structure as claimed in claim ~~[[19]]~~ 16, wherein the unitary structure is composed of a compliant material having substantially uniform compliance and a thickness of the unitary structure varies according to distance from the edge of the unitary structure.

24. (Canceled)

25. (Currently Amended) The ~~deformable mirror~~ structure as in claim 1, wherein the self deforming mirror comprises ~~comprising~~ a reflective surface provided on a substrate and a layer of deformable material attached to the substrate that is operable to deform the mirror, ~~in combination with a deformable mirror holder as claimed in claim 4.~~

26. (Currently Amended) The ~~deformable mirror~~ structure ~~in combination with a deformable mirror holder as claimed in claim 25,~~ comprising including a cooling system.

27. (Currently Amended) The ~~deformable mirror~~ structure ~~in combination with a deformable mirror holder~~ as claimed in claim 26, wherein said cooling system ~~includes~~ comprises a number of interconnecting conduits which are joined to form a continuous through-passage, enabling coolant to be admitted and circulated therethrough.

28. (Currently Amended) The ~~deformable mirror~~ structure ~~in combination with a deformable mirror holder~~ as claimed in claim 24, ~~including~~ further comprising a tip-tilt stage.

29. (Canceled)

30. (Canceled)

31. (New) A mirror structure as claimed in claim 1, wherein a required deformation response for the self-deforming mirror includes a required resonant frequency for the self-deforming mirror when mounted on the support structure.

32. (New) The mirror structure as in claim 1, wherein a required deformation response for the self-deforming mirror includes a required stroke characteristics for the self-deforming mirror when mounted on the support structure.

33. (New) The mirror structure as in claim 1, wherein the self-deforming mirror is a bimorph self-deforming mirror having at least one layer of deformable material.